IN THE CLAIMS

Claim 9 is pending in this application. Please amend claim 9 as follows:

1. (Canceled)

2. (Withdrawn) An optimization problem solution acquisition method whereby an optimization problem is sent from a requesting system, which requests a solution of an input optimization problem, to a solving system, and a solution of the optimization problem is found in said solving system, sent to said requesting system and output from said requesting system, said optimization problem solution acquisition method comprising the steps of:

converting, in said requesting system, said optimization problem into another optimization problem having a different equality $g'(y) = 0$, a different inequality constraint $h'(y) \geqq 0$, and a different objective function $f'(y)$ by using a suitably determined variable conversion $y = u(x)$ and equivalent transformation of expressions;

sending said converted optimization problem to said solving system;

solving, in said solving system, said sent converted optimization problem, and finding a solution y;

sending said found solution y to said requesting system; and

conducting, in said requesting system, reverse conversion of the variable $x = u^{-1}(y)$ on said sent solution y, finding a solution x of the original optimization problem, and outputting said solution x from said requesting system.

3. (Withdrawn) An optimization problem solution acquisition method according to claim 2, wherein,

if the equality constraint of said optimization problem is represented as $Ax = b$, where A is a coefficient matrix having m rows and n columns, and b is an m-dimensional right hand side vector, then

as said variable conversion, linear transformation $y = Q^{-1}x$ using a permutation matrix Q having n rows and n columns is used,

as said equivalent transformation of expressions, processing of multiplying both hand sides of said equality constraint $Ax = b$ by a nonsingular matrix P having m rows and m columns is used, and

as said reverse conversion of the variable, linear transformation $x = Qy$ is used.

4. (Withdrawn) An optimization problem solution acquisition method according to claim 3, wherein

a matrix P_2P_1 is used as said nonsingular matrix P, and

a matrix Q_1Q_2 is used as said permutation matrix,

where P_1 is a left permutation matrix having m rows and m columns for transforming said coefficient matrix A into a bordered block diagonal form, and

Q_1 is a right permutation matrix having n rows and n columns for transforming said coefficient matrix A into the bordered block diagonal form, and

in a block diagonal form P_1AQ_1 obtained by making said P_1 and Q_1 act on said coefficient matrix A,

P_2 is a matrix for conducting linear transformation only between rows in each diagonal block, and

Q_2 is a matrix for conducting permutation only between columns in each diagonal block.

5 - 8. (Canceled)

9. (Currently Amended) An application service provider (ASP) system for providing a solution of an optimization problem, comprising:

a client computer system that accepts a solving request of an optimization problem from a user, and

a server system that obtains a solution of the optimization problem,

wherein the client computer system executes

(1) receiving an optimization problem represented by an equality constraint $Ax = b$ defined by a coefficient matrix A having m rows and n columns and an m-dimensional right hand side vector b, an inequality constraint $x \geq 0$, and an objective function f(x) to be minimized,

(2) ~~generating a nonsingular matrix P having m rows and m columns and a permutation matrix Q having n rows and n columns with using a ciphering key,~~

generating a left permutation matrix P_1 having m rows and m columns and a right permutation matrix Q_1 having n rows and m columns for transforming the coefficient matrix A of the original problems into a bordered block diagonal form,

(3) choosing one row of a matrix P_1AQ_1 by using a first random number, choosing another row of the matrix P_1AQ_1 which belongs to the same diagonal block as the chosen row by using a second random number where the first chosen row is referred to as L_1th row and the second chosen row is referred to as L_2th row, adding a third random number r to a (L_1,L_2) th component of a unit matrix having m rows and m columns, and adding a fourth random number s to a (L_2, L_1)th component of the unit matrix thereby to generate a matrix P_1,

(4) choosing one column of the matrix P_1AQ_1 by using a fifth random number and choosing another column of the matrix P_1AQ_1 which belongs to the same diagonal block as the chosen column is chosen by using a sixth random number, where the first chosen row is referred to as R_1th row and the second chosen row is referred to as R_2th row, thereby to generate a matrix Q_1',

(5) generating P_2', Q_2', P_3', Q_3', ..., P_n', Q_n' by sequentially using random numbers included in a ciphering key, generating a matrix P2 and a matrix Q2 according to the relations $P_2 = P_n' \ldots P_2' P_1'$ and $Q_2 = Q_1, Q_2' \ldots Q_n'$, and generating the nonsingular matrix P having m rows and m columns and the permutation matrix Q having n rows and n columns by using the relations $P = P_2P_1$ and $Q = Q_1Q_2$,

[[(3)]](6) converting said optimization problem into another optimization problem having a different equality constraint (PAQ)y = Pb, a different inequality constraint $y \geq 0$, and a different objective function f(Qy), by using said nonsingular matrix P and said permutation matrix Q,

[[(4)]](7) sending the converted optimization problem to the server system,

[[(5)]](8) receiving a solution y of the converted optimization problem from the server system, and

[[(6)]](9) reverse converting $x = Qy$ on the solution y by using the matrix Q and thereby finding a solution x of the optimization problem $Ax = b$,

~~Wherein~~ wherein the server system executes

(1) receiving the converted optimization problem including the equality constraint $(PAQ)y = Pb$, the inequality constraint $y \geq 0$, and the objective function $f(Qy)$,

(2) finding a solution y of the converted optimization problem, and

(3) sending the solution y to the client computer system.